

CLAIMS

What is claimed is:

1. A server system, comprising:

5 one or more computers; and

an application executing on the computers to handle client requests, the application comprising:

10 a business logic layer to process the client requests according to a particular business domain and produce replies to be returned to the clients in response to the client requests; and

a presentation layer separate from, but in communication with, the business logic layer to structure the replies in a manner that makes the replies presentable on different types of client devices.

15 2. A server system as recited in claim 1, wherein the application is reconfigurable to other business domains by substituting other business logic layers that are designed to process the client requests according to the other business domains.

20 3. A server system as recited in claim 1, wherein the presentation layer is configured to determine a layout of content in the replies.

4. A server system as recited in claim 1, wherein the presentation layer is configured to determine display attributes in the replies.

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5. A server system as recited in claim 1, wherein the different types of client devices support different data formats, the presentation layer being configured to select appropriate data formats for encoding the replies.

5 6. A server system as recited in claim 1, wherein the different types of client devices support different communication protocols, the presentation layer being configured to select appropriate communication protocols for delivering the replies to the clients.

10 7. A server system as recited in claim 1, wherein the presentation layer is configured to determine how to display the replies for a particular client.

15 8. A server system as recited in claim 1, wherein the presentation layer comprises:

a presentation tier to determine how the replies will appear on the client devices to users; and

a rendering tier, separate from the presentation tier, to determine how to render the replies on the client devices.

20 9. A server system as recited in claim 1, wherein the presentation layer comprises:

a tag library containing pre-constructed tags for a variety of data formats; and

25 a request dispatcher to structure a reply for service back to a client device, the request dispatcher being configured to access the tag library to obtain tags to structure the reply according to a particular data format.

10. A server system as recited in claim 9, wherein the request dispatcher is configured to select a communication protocol to be used to serve the reply back to the client device.

5 11. A server system as recited in claim 9, wherein the presentation layer further comprises a content renderer to conform the reply structured by the request dispatcher to output capabilities of the client device to which the reply will be returned.

10 12. In a server application that receives client requests for a problem domain and has at least one problem solving module to generate replies to be served back to clients, a presentation module separate from the problem solving module, comprising:

a presentation component to construct how a reply will appear; and

15 a rendering component to configure how the reply is output on a particular client.

20 13. A presentation module as recited in claim 12, wherein the presentation component is configured to determine a layout of content to be included in the reply.

25 14. A presentation module as recited in claim 12, wherein the presentation component is configured to determine display attributes for the reply.

15. A presentation module as recited in claim 12, wherein the clients support different data formats, the presentation component being configured to select an appropriate data format for encoding the reply for the particular client.

5 16. A presentation module as recited in claim 12, wherein the clients support different communication protocols, the presentation component being configured to select an appropriate communication protocol for delivering the reply to the particular client.

10 17. A presentation module as recited in claim 12, wherein the rendering component is configured to conform the reply to a specific display at the particular client.

15 18. A computer software architecture embodied on one or more computer-readable media, comprising:

a presentation tier to determine how data is to be presented on a client device; and

a rendering tier, separate from the presentation tier, to determine how to render the data on the client device.

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19. A computer software architecture as recited in claim 18, wherein the presentation tier is configured to determine at least one of (1) a layout of the data, (2) a color scheme in which to present the data, (3) a presentation theme, and (4) a particular skin appearance.

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20. A computer software architecture as recited in claim 18, wherein the presentation tier is configured to select a data encoding format for encoding the data and a communications protocol in which to send the data to the client device.

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21. A computer software architecture as recited in claim 18, wherein the presentation tier comprises multiple dispatchers, each dispatcher being configured to encode the data according to a particular encoding format.

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22. A computer software architecture as recited in claim 18, wherein the presentation tier comprises multiple dispatchers, each dispatcher being configured to package the data according to a particular communications protocol.

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23. A computer software architecture as recited in claim 18, wherein the presentation tier comprises:

a tag library containing pre-constructed tags for a variety of data formats; and

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a request dispatcher to structure the data using the tags from the tag library, the tags being selected to structure the data in a manner that is supported by the client device.

24. An architecture comprising:

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a tag library containing pre-constructed tags for a variety of data formats;

multiple request dispatchers to structure replies to be returned to client devices in response to requests submitted by the client devices, individual

request dispatcher formatting data according to particular formats that are supported by the client devices; and

content renderer to conform the replies to output capabilities of the client devices to which the replies are to be returned.

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25. An architecture as recited in claim 24, wherein individual request dispatchers are further configured to select communication protocols to be used to serve the replies back to the client devices.

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26. An architecture as recited in claim 24, wherein the content renderer is configured to conform the replies to specific display types at the client devices.

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27. A method comprising:
receiving a reply generated by a server application in response to a client request;

structuring the reply to define how the reply will appear when presented at the client; and

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independent of said structuring, conforming the reply to output capabilities of the client.

28. A method as recited in claim 27, wherein the structuring comprises selecting an encoding format in which to encode the reply.

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29. A method as recited in claim 27, wherein the structuring comprises selecting a communication protocol for sending the reply to the client.

30. A method as recited in claim 27, wherein the structuring comprises selecting at least one of (1) a layout of content in the reply, (2) a color scheme of the reply, (3) a skin theme, and (4) a logo to brand the reply.

5 31. A method as recited in claim 27, further comprising:
storing pre-constructed tags that can be used to construct the reply in different formats; and
selecting at least one of the tags when structuring the reply.

10 32. A method as recited in claim 27, wherein the configuring comprises sizing the reply for a display at the client.

33. One or more computer-readable media comprising computer-executable instructions that, when executed, direct an application server to:

15 generate replies in response to client requests, the client requests being submitted by diverse client devices that support different data formats and different communication protocols; and

structure the replies to define how the replies will appear when presented on the client devices and independently form individual replies for output capabilities of the client devices so that the replies are encoded to comply with the data formats supported by the client devices and are sent using the communication protocols of the client devices.

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34. One or more computer-readable media as recited in claim 33,
25 further comprising computer-executable instructions that, when executed, direct an application server to use pre-constructed tags to structure the replies.